



The new 4012-46TWG engine has been developed using the latest engineering techniques and builds on the strengths of the already very successful 4012 Series family and addresses today's uncompromising demands within the power generation industry. Developed from a proven heavy-duty industrial base these products offer superior performance and reliability.

The 4012-46TWG3A is a turbocharged and air-to-water charge-cooled, 12 cylinder diesel engine which offers a choice of temperate or tropical cooling. Its premium features provide exceptional power-to-weight ratio resulting in exceptional fuel consumption.

The overall performance and reliability characteristics makes this one of the prime choices for today's power generation industry.

# 4000 Series 4012-46TWG3A

# Diesel Engine – ElectropaK Non-Emissions compliant

# 1263 kWm 1500 rpm 1263 kWm 1800 rpm

# Economic power

 Individual 4 valve per cylinder give optimised gas flows, while unit fuel injectors ensure ultra fine fuel atomisation and hence controlled rapid combustion for efficiency and economy

**Servins** 

 Commonality of components with other engines in the 4000 Series family allows reduced parts stocking levels for the end users

# Reliable power

- Developed and tested using latest engineering techniques
  - Piston temperatures are controlled by an advanced gallery jet cooling system
- All engines are tolerant of a wide range of temperatures without derate
- Service is provided through the extensive Perkins network of distributors and dealers worldwide

# Clean, efficient power

- Exceptional power to weight ratio and compact size for easier transportation and installation
- Designed to provide excellent service access for ease of maintenance
- Engines designed to comply with major international standards
- Low gaseous emissions for cleaner operation.

# Product support

- Perkins actively pursues product support excellence by ensuring our distribution network invest in their territory - strengthening relationships and providing more value to you, our customer
- Through an experienced global network of distributors and dealers, fully trained engine experts deliver total service support around the clock, 365 days a year. They have a comprehensive suite of web based tools at their fingertips covering technical information, parts identification and ordering systems, all dedicated to maximising the productivity of your engine
- Throughout the entire life of a Perkins engine, we provide access to genuine OE specification parts and service. We give 100% reassurance that you receive the very best in terms of quality for lowest possible cost .. wherever your Perkins powered machine is operating in the world

#### This engine does not comply with harmonized international regulated emissions limits

Engine Speed (rev/min)	Type of Operation	Typical Generator Output (Net)		Engine Power			
				Gross		Net	
(rev/mm)		kVA	kWe	kWm	bhp	kWm	bhp
1500	Baseload Power	1079	864	967	1296	909	1218
	Prime Power	1364	1092	1207	1618	1149	1540
	Standby (maximum)	1500	1200	1321	1772	1263	1694
1800	Baseload Power	1079	864	967	1296	909	1218
	Prime Power	1364	1092	1207	1618	1149	1540
	Standby (maximum)	1500	1200	1321	1772	1263	1694

The above ratings represent the engine performance capabilities guaranteed within plus or minus 3% at the reference conditions equivalent to those specified in ISO 8528/1, ISO 3046/1, BS 5514/1.

Rating conditions: 25°C air inlet temperature, barometric pressure 100 kPa, relative humidity 30%. Please consult your distributor or the factory for ratings in other ambient conditions.

Note: For full ratings please refer to Perkins Engines Company Limited. All electrical ratings are based on an average alternator efficiency and a power factor of 0.8. Fuel specification: BS2869: Class A2.

Rating Definitions

Baseload Power: Power available for continuous full load operation. No overload is permitted.

Prime Power: Power available for variable load with an average load factor not exceeding 80% of the prime power rating in any 24 hour period. Overload of 10% permitted for 1 hour in every 12 hours operation Standby (maximum): Power available at variable load in the event of a main power network failure up to a maximum of 500 hours per year. No overload is permitted.

# 4012 Series 4012-46TWG3A

# Standard ElectropaK Specification

#### Air inlet

Mounted air filters and turbochargers

#### **Fuel System**

- Direct fuel injection system with fuel lift pump н.
- Governing to ISO 8528-5 class G3 with isochronous capability
- Full-flow spin-on fuel oil filters

#### Lubrication System

- Wet sump with filler and dipstick
- Full-flow spin-on oil filters
- Engine jacket water/lub oil temperature stabiliser

#### **Cooling System**

- Two twin thermostats н.
- System designed for ambients up to 50°C
- Powder coated radiator comprising: water radiator; fuel oil . cooling (optional); all pipes, hoses and clips; fan; pulleys; fan belts and safety guards

#### **Electrical Equipment**

- 24 volt starter motor and 24 volt alternator with integral regulator and DC output
- Overspeed switch and magnetic pickup .
- Turbine inlet temperature shutdown switch н.
- Twin high coolant temperate shutdown switches
- Twin low oil pressure shutdown switches

#### Flywheel and Housing

- Flywheel to SAE J620 size 18
- SAE 00 flywheel housing

### **Optional Equipment**

Choice of temperate or tropical radiators available dependant on operational cooling requirements Fuel oil cooler integral to the radiator assembly Immersion heater with thermostat Note: This list is not exhaustive, further options will be available at the product's introduction



See 'General Data - Dimensions' below

Fuel Consumption						
Engine Speed	1500 r	ev/min	1800 rev/min			
	g/kWh	l/hr	g/kWh	l/hr		
Standby	217	318	222	325		
Prime power	212	283	218	291		
Continuous baseload	213	225	215	227		
75% of prime power	213	213	tbc	tbc		
50% of prime power	226	151	tbc	tbc		

12

60° Vee form

45.842 litres

4 stroke

13.6:1

160 x 190 mm

Direct injection

from flywheel end

Turbocharged and

air to water charge cooled

Anti-clockwise, viewed

2255 mm

# **General Data**

Number of cylinders Cylinder arrangement Bore and stroke Displacement Induction system

Cycle Combustion system Compression ratio Rotation

Cooling system		Water-cooled			
Firing order		1A, 6B, 5A, 2B, 3A, 4B,			
		6A, 1B, 2A, 5B, 4A, 3B			
Total lubricat	ion	177 litres			
system capacity					
		Temperate	Tropical		
Total coolant capacity		196 litres	201 litres		
Total weight (dry)		5220 kg	5283 kg		
Dimensions	Length	3714 mm	3714 mm		
	Width	1780 mm	1978 mm		

2255 mm

Final weight and dimensions will depend on completed specification

Height



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